[021] Fig. 1:

A converter housing 1 is in rotationally fixed connection with a drive engine (not shown). A pump impeller wheel 2 can be connected to the converter housing by a clutch 3, which is the so-termed primary clutch. Depending on the actuation pressure in a space 4 and on the converter housing pressure in a space 5, the clutch produces a transmissible torque such that the hydrodynamic torque converter can even be operated when there is slippage of the clutch 3. The converter housing 1 can be connected directly to a turbine rotor 7 by means of a converter bridging clutch 6. A stator 8 is in rotationally fixed connection with a positionally fixed component 9. Radially on the inside, the ~~turbine rotor~~ impeller 2 has a flange 10 which, on the one hand, serves to support the ~~turbine rotor~~ impeller and, on the other hand, has on its inner axial extension 11 cams 12 that enable the speed to be detected by a speed sensor 13. The speed sensor 13 is arranged in the positionally fixed component 9, allowing the signal leads to be positioned statically. A further speed sensor (not shown) determines the rotation speed of the turbine rotor 7, and the signals giving the speed of the turbine rotor 7 and the speed of the pump impeller wheel 2 are passed on to an electronic control unit (not shown) in which characteristic hydrodynamic torque converter values are stored in a performance matrix, and which can determine the torque of the turbine rotor with reference to those values. Likewise, it is possible to transmit to the electronic control unit further signals from temperature and pressure sensors, so as to render the calculation of the torque more precise.

1-10. (CANCELED)

11. (CURRENTLY AMENDED) A hydrodynamic torque converter, comprising a clutch (3) arranged ahead of a pump impeller wheel (2) and connected to a drive mechanism, a turbine rotor (7) forms a drive output, such that in order to determine torque of the turbine rotor (7) a rotation speed of the turbine rotor (7) is detected by a first speed sensor and transmitted to an electronic control unit, a rotation speed of the pump impeller wheel (2) is transmitted to the electronic control unit by a second speed sensor (13) to the electronic control unit[[.]]; and

wherein a performance matrix containing characteristic hydrodynamic torque converter ~~according to claim 11, wherein a performance matrix~~ values of the torque converter is stored in the electronic control unit, with reference to which, using a speed of the pump impeller wheel (2) and a speed of the turbine rotor (7), the electronic control unit determines the torque of the turbine rotor (7).

12. (PREVIOUSLY PRESENTED) The hydrodynamic torque converter according to claim 11, wherein the clutch can be operated with clutch slippage.

13. (CANCELED)

14. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim 11, wherein the ~~rotation speed~~ second speed sensor (13) is arranged in a positionally fixed component which ~~is in rotationally fixed~~ supports a relative rotational connection with a stator (8) of the torque converter.

15. (PREVIOUSLY PRESENTED) The hydrodynamic torque converter according to claim 11, wherein radially on an inside, the pump impeller wheel (2) has a flange (10) at an axial end of which means enabling the rotation speed to be detected are arranged.

16. (PREVIOUSLY PRESENTED) The hydrodynamic torque converter according to claim 11, wherein means enabling detection of the speed consist of cams arranged parallel to a rotation axis of the torque converter.

17. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim 11, wherein [[a]] the second sensor (13) for determining the speed of the pump impeller wheel (2) is arranged inside a converter housing (1), parallel to a rotation axis of the torque converter.

18. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim 11, wherein [[a]] the second sensor (13) for determining the speed of the pump

impeller wheel (2) is arranged at right-angles to a rotation axis (21) of the torque converter.

19. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim 11, wherein [[a]] the second sensor (13) for the speed of the pump impeller wheel (2) is arranged outside a converter housing (1).

20. (CURRENTLY AMENDED) The hydrodynamic torque converter according to claim 11, wherein the clutch (3) is arranged inside one of the converter housing (1) or a transmission housing (16) ~~positioned after~~.

21. (NEW) A hydrodynamic torque converter, comprising:

a clutch (3) arranged ahead of a pump impeller wheel (2) and connected to a drive mechanism;

a turbine rotor (7) forming a drive output;

a first speed sensor detecting the speed of the turbine rotor (7);

a second speed sensor detecting the speed of the pump impeller wheel;

an electronic control unit (2) communicating with the first and second speed sensors to receive the detected speeds of the pump impeller wheel and turbine rotor (7); and

wherein a performance matrix containing characteristic hydrodynamic torque converter values of the torque converter is stored in the electronic control unit, with reference to which, using a speed of the pump impeller wheel (2) and a speed of the turbine rotor (7), the electronic control unit determines the torque of the turbine rotor (7).

22. (NEW) The hydrodynamic torque converter according to claim 21, wherein the clutch can be operated with clutch slippage.

23. (NEW) The hydrodynamic torque converter according to claim 21, wherein the second speed sensor (13) is arranged in a positionally fixed component which supports a relative rotational connection with a stator (8) of the torque converter.

24. (NEW) The hydrodynamic torque converter according to claim 21, wherein the pump impeller wheel (2) has a radial inside flange (10) having an axial end defining cams enabling the rotation speed of the pump impeller wheel (2) to be detected.

25. (NEW) The hydrodynamic torque converter according to claim 24, wherein the cams enabling detection of the speed are arranged parallel to a rotation axis of the torque converter.

26. (NEW) The hydrodynamic torque converter according to claim 21, wherein the second sensor (13) for determining the speed of the pump impeller wheel (2) is arranged inside a converter housing (1), parallel to a rotation axis of the torque converter.

27. (NEW) The hydrodynamic torque converter according to claim 21, wherein the second sensor (13) for determining the speed of the pump impeller wheel (2) is arranged at right-angles to a rotation axis (21) of the torque converter.

28. (NEW) The hydrodynamic torque converter according to claim 21, wherein the second sensor (13) for the speed of the pump impeller wheel (2) is arranged outside a converter housing (1).

29. (NEW) The hydrodynamic torque converter according to claim 21, wherein the clutch (3) is arranged inside one of the converter housing (1) or a transmission housing (16).

30. (NEW) A hydrodynamic torque converter, comprising:

a clutch (3) arranged ahead of a pump impeller wheel (2) and connected to a drive mechanism;

a turbine rotor (7) forming a drive output,

a first speed sensor detecting the speed of the turbine rotor (7);

a second speed sensor detecting the speed of the pump impeller wheel;

an electronic control unit (2) communicating with the first and second speed sensors to receive the detected speeds of the pump impeller wheel and turbine rotor (7);

a performance matrix containing characteristic hydrodynamic torque converter values of the torque converter is stored in the electronic control unit, with reference to which, using a speed of the pump impeller wheel (2) and a speed of the turbine rotor (7), the electronic control unit determines the torque of the turbine rotor (7); and

wherein the pump impeller wheel (2) has an inner axial extension (11) axially depending from the pump impeller wheel (2), the axial extension (11) having an axial end defining cams enabling the rotation speed of the pump impeller wheel (2) to be detected, and the cams are arranged on the axial end of the flange parallel to a rotation axis of the torque converter.